

<b>Notice of Allowability</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	09/760,009	PARCE ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Ling-Siu Choi	1713	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the Amendment filed September 30, 2005.
2. ☒ The allowed claim(s) is/are 1-70.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☐ All    b) ☐ Some\*    c) ☐ None    of the:
    1. ☐ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  5. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

- |   |  |
|---|--|
| <ol style="list-style-type: none"> <li>1. <input type="checkbox"/> Notice of References Cited (PTO-892)</li> <li>2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)</li> <li>3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),<br/>Paper No./Mail Date _____</li> <li>4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit<br/>of Biological Material</li> </ol> | <ol style="list-style-type: none"> <li>5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)</li> <li>6. <input type="checkbox"/> Interview Summary (PTO-413),<br/>Paper No./Mail Date _____.</li> <li>7. <input type="checkbox"/> Examiner's Amendment/Comment</li> <li>8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance</li> <li>9. <input type="checkbox"/> Other _____.</li> </ol> |
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**DETAILED ACTION**

1. This Office Action is in response to the Amendment filed September 30, 2005. Claims 1-70 are now pending.

*Allowable Subject Matter*

2. Claims 1-70 are allowed.
3. The following is an examiner's statement of reasons for allowance:
- The present claims are allowable over the closest references: Kopf-Sill (US 6,001,231).

A method to monitor a flow rate of a fluidic material in a microfluidic device, comprising	
1	flowing a <b>first marker moiety</b> through <b>at least one microscale channel</b>
2	flowing the <b>fluidic material</b> through the at least one microscale channel
3	flowing a <b>second marker moiety</b> through <b>the at least one microscale channel</b>
4	detecting the first markert moiety, resulting in detection of a first signal having a first area and a first retention time
5	detecting the second markert moiety, resulting in detection of a second signal having a second area and a second retention time
6	deconvoluting the first signal and the second signal to provide an indication of flow rate of the fluidic material, wherein the deconvoluting comprises identifying differences <b>in area and retention time</b> between two or more of the first signal, the second signal, a first selected standard, or a second selected standard

(summary of claim 1)

Kopf-Sill disclose a method to monitor flow rate in microfluidic systems, the method comprising (a) flowing a first fluid along the first channel by applying a voltage gradient across a length of the first channel; (b) injecting a signaling compound into the first channel; (c) **determining the flow rate of the first fluid in the first channel from the rate at which the signaling compound flows from a first point to a second point *in the first channel***; (d) flowing a second fluid different from the first fluid along the second channel; (e) **determining the flow rate of the second fluid in the second channel from the rate at which the signaling compound flows from a first point to a second point *in the second channel***, wherein channel 1 and channel 2 intersect each other, which can be used to control the flow rate in the electroosmotically driven microfluidic system (abstract; claim 1). Kopf-Sill further disclose that optically detectable signals is used in both the overall operation and the determination of flow rate, wherein those optical signals are distinguishable fluorescent compounds which emit light at two different wavelengths (col. 13, lines 23-58). Kopf-Sill furthermore disclose a program for a computer to monitor and control flow rate within the microfluidic device (col. 16, lines 34-36). However, Kopf-Sill does not teach or fairly suggest the claimed method to monitor the flow rate, comprising deconvoluting measured area and retention time of first and second markers through the microscale channel.

In light of the above discussion, it is evident as to why the present claims are patentable over the prior art.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for

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Allowance."

***Conclusion***

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ling-Siu Choi whose telephone number is 571-272-1098.

If attempt to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu, can be reach on 571-272-1114.



**LING-SUI CHOI**  
**PRIMARY EXAMINER**

November 30, 2005